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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,234	12/01/2005	Beat O. Blattmann	GC718-2-US	8676

5100 7590 12/09/2009

DANISCO US INC.
ATTENTION: LEGAL DEPARTMENT
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EXAMINER	
PROUTY, REBECCA E	
ART UNIT	PAPER NUMBER
1652	
MAIL DATE	DELIVERY MODE
12/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/524,234	BLATTMANN ET AL.	
	Examiner	Art Unit	
	Rebecca E. Prouty	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-19* is/are pending in the application.

4a) Of the above claim(s) *9-12 and 16-19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11-09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/20/09 has been entered.

Claims 1-8 and 20-22 have been canceled. Claims 9-19are still at issue and are present for examination.

Applicants' arguments filed on 11/20/09, have been fully considered and are deemed to be persuasive to overcome some of the rejections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn.

Claims 9-12 and 16-19 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 5/30/08.

Applicant is required to comply with the sequence rules by inserting the sequence identification numbers of all sequences recited in the specification and claims. It is particularly

noted that Figures 3 and 19-21 include sequences without any sequence identification numbers recited in the figure or brief description thereof. See particularly 37 CFR 1.821(d).

Claims 13-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 (upon which claims 14 and 15 depend is confusing in the recitation of "a nucleic acid comprising a sequence encoding a signal sequence operable in a *Bacillus* species and a sequence which is at least 95% identical to SEQ ID NO:2" as this recitation if taken literally appears to recite a construct including two signal peptides as residues 1-30 of SEQ ID NO:2 include a heterologous signal peptide (see for example the brief description of Figure 12) and any sequence lacking all of residues 1-30 of SEQ ID NO:2 would be less that 95% identical thereto. However, no constructs comprising two signal peptides are described within the specification. It is presumed that applicants intended either "a nucleic acid comprising a sequence encoding a signal sequence operable in a *Bacillus* species and a phytase wherein said sequence is at least 95% identical to SEQ ID NO:2" or a "a nucleic acid comprising a sequence encoding a signal sequence operable in a *Bacillus* species and a sequence

which is at least 95% identical to residues 31-440 of SEQ ID NO:2".

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Short et al. (US Patent 6,720,014) in view of Berka et al. (US Patent 6,221644) and van der Laan et al.

Short teach methods of making variant phytases comprising error-prone amplification of a naturally occurring *E. coli* phytase nucleic acid, recombinant expression of the mutant nucleic acid (see for example column 7, lines 29-36, column 8, lines 11-17, and column 18, lines 41-48) and isolation of the mutant phytase. Short et al. teach that suitable recombinant hosts include *E. coli* and *Bacillus subtilis* (see column 36,

lines 3-10). The mature phytase of Short et al. (i.e., residues 23-432 of SEQ ID NO:2 of Short et al.) is identical to residues 31-440 of SEQ ID NO:2 herein except at 2 positions (residues 306 and 307 of SEQ ID NO:2 herein). Short et al. do not specifically teach the use of a Bacillus signal peptide for the expression and secretion of the phytase. However Short et al. do teach that the polynucleotides encoding the phytase can include a signal sequence for secretion of the phytase from the recombinant host cell (see column 33, lines 21-35).

Berka et al. teach methods of expression and secretion of a microbial phytase in a variety of recombinant host cells. Berka et al. teach that an effective signal peptide coding region for bacterial host cells include the signal peptide coding region obtained from a *Bacillus* protease (see column 12, lines 27-31).

van der Laan et al. teach a gene encoding a *Bacillus* protease and specifically disclose the signal peptide portion thereof is residues 1-27. Residues 8-27 of the signal peptide of van der Laan et al. are identical to residues 8-27 of SEQ ID NO:2 herein

Therefore, it would have been obvious to one of ordinary skill in the art to use the signal peptide of van der Laan et al. as taught by Berka et al. for the recombinant expression and secretion of the mutated mature phytase gene produced by the

methods of Short et al. One of ordinary skill in the art would have been motivated to select the signal peptide of van der Laan et al. to replace the signal peptide of the phytase gene of Short et al. as Berka et al. teach that the signal peptide coding region obtained from a *Bacillus* protease is particularly suitable for secretion from bacterial cells and an ordinary artisan would be well aware that the use of a signal peptide derived from a protein produced by the host of choice is preferable as the parameters for optimal function of expression control sequences vary between different host cells.

Applicants argued in response to the previous rejection that the amino acid sequences disclosed in Short et al. are not identical to SEQ ID NO:2 but in fact less than 95% identical thereto. However, this is not persuasive as while Short et al. may not be identical to SEQ ID NO:2 herein, the suggested nucleic acid of the instant rejection i.e., a nucleic acid encoding residues 23-432 of SEQ ID NO:2 of Short et al. with the signal peptide thereof (i.e., residues 1-22 of SEQ ID NO:2 of Short et al.) replaced with residues 1-27 of van der Laan et al. would be 97% identical to SEQ ID NO:2 herein

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca E. Prouty whose telephone number is 571-272-0937. The examiner can normally be reached on Tuesday-Friday from 8 AM to 5 PM. The examiner can also be reached on alternate Mondays

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang, can be reached at (571) 272-0811. The fax phone number for this Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Rebecca Prouty/
Primary Examiner
Art Unit 1652